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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/634,706	08/07/2000	Marcel DeGrandpre	99293-US	3849
23553	7590	05/20/2004	EXAMINER	
MARKS & CLERK P.O. BOX 957 STATION B OTTAWA, ON K1P 5S7 CANADA			VOLPER, THOMAS E	
			ART UNIT	PAPER NUMBER
			2665	
			DATE MAILED: 05/20/2004	

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/634,706

Applicant(s)

DEGRANDPRE ET AL.

Examiner

Thomas Volper

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The indicated allowability of claims 11-13 is withdrawn in view of the newly discovered reference(s) to Upham et al. (US 6,452,945) and Dempsey et al. (US 5,282,200). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kumata (US 6,385,165) in view of Upham et al. (US 6,452,945) and Dempsey et al. (US 5,282,200).

Regarding claims 1 and 11, Kumata discloses an add-drop multiplexer, meeting the limitation of an inverse multiplexer device as in the present invention, comprising an input port, and a plurality of output ports for connection to outgoing physical links (see Figure 4). Kumata discloses a cascaded arrangement of add/drop devices in a SONET ring structure (see Figure 1), thus forming an inverse multiplexing group. The electrooptic transducer (29) represents an expansion port for transmitting packets to other inverse multiplexers, and the optoelectric transducer (30) represents an expansion port for receiving packets from other inverse multiplexers. Kumata fails to expressly disclose transmitting outgoing packets of the cascaded inverse multiplexing group on the outgoing physical links of more than one inverse multiplexing

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device. Kumata also fails to expressly disclose a master device and controller for outputting packets on the inverse multiplexing group. Kumata also fails to expressly disclose transmit buffers. Upham discloses a ring structure with multiple add-drop multiplexers that supports multicasting. A tributary signal 160B input into one add-drop multiplexer may be destined for multiple destinations on more than one add-drop multiplexer (col. 6, lines 60-63). Upham also discloses a control system (290) connected to the add-drop multiplexer (see Figure 2). Upham also discloses that a node may include buffers to buffer data while crosspoints (710) are reconfigured (col. 13, lines 20-33). Dempsey discloses designating one network element on a ring as a ring master (see Abstract). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to provide the multicasting functionality of Upham in the cascaded add-drop device design of Kumata. It also would have been obvious to include the buffers of Upham in the add-drop device of Kumata. It also would have been obvious to a person of ordinary skill in the art to designate a ring master as in the invention of Dempsey wherein the ring master would have a controller such as the add-drop device of Upham. One of ordinary skill in the art would have been motivated to provide the multicasting feature of Upham in the system of Kumata to provide multiple copies of a signal that was destined for multiple destinations serviced by different add-drop devices on the ring. One would have included buffers in an add-drop device of Kumata in order to give the switches time to configure themselves before transmitting data. One of ordinary skill in the art would have been motivated to provide a ring master such as the ring master element of Dempsey in the multicasting system in order to control and coordinate the multicasting process with all the add-drop devices in the ring network.

Regarding claim 2, Kumata discloses a path from input ports on one interface (20) via expansion ports to and from the ring to output ports on interface (50) (see Figure 4). As described above, it would have been obvious to include buffers in the add-drop device of Kumata in order to give the switches time to configure themselves. Thus, data input on interface (20) would be buffered before reaching the expansion port (29) and eventually reaching the output ports of interface (50).

Regarding claim 3, as described above, the system provided by Kumata in view of Upham and Dempsey discloses transmitting packets received at one add-drop device through the expansion port to output links on other add-drop devices.

Regarding claims 4 and 12, Kumata discloses that the expansion ports are connected to a parallel ring (see Figure 1).

Regarding claims 5, 14 and 15, neither Kumata nor Upham expressly disclose sending control messages between the add-drop multiplexers. Dempsey discloses sending commands from one node on a ring to another node on the ring (col. 9, lines 29-60). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to pass commands from one add-drop multiplexer to the next on the ring provided by Kumata in view of Upham and Dempsey as described thus far. One of ordinary skill in the art would have been motivated to do this to notify other add-drop multiplexers of a failure on the ring in order to provide protection switching.

Regarding claims 6, 9, 16 and 17, Upham discloses that routing information may be obtained from headers in incoming data (col. 13, line 25-28). This meets the limitation of address information in bytes of data on the ring, however, Kumata in view of Upham and

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Dempsey fails to expressly disclose the details of storing an address on said ring of the transmit buffers and output ports connected to the ring, and assembling outgoing bytes into messages containing a destination address, and extracting incoming bytes destined for a particular add-drop device. However, it is well known in the art that in a SONET ring the nodes on the ring examine bytes of data on the ring in order to determine whether that data is determined for that particular node. Each node, or add-drop multiplexer must add address information to outgoing bytes and detect address information in incoming bytes for the system to function as a SONET ring. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to provide the above mentioned functionality of assembling outgoing bytes into messages containing a destination address, and extracting incoming bytes destined for a particular add-drop device. One of ordinary skill in the art would have been motivated to do this to be able to route data to a particular add-drop device on the ring, and to be able to receive data from another add-drop device on the ring.

Regarding claim 7, Upham discloses that the control system (290) has a control port common to both transmit and receive directions (see Figure 4).

Regarding claim 8, Kumata discloses a plurality of input ports for receiving data on a plurality of input links (see Figure 4). Also, as mentioned above, Upham discloses that a node may include buffers to buffer data while crosspoints (710) are reconfigured (col. 13, lines 20-33). Thus the system provided by Kumata in view of Upham and Dempsey meets the limitation of receiving packets from a plurality of input links on one or more add-drop devices on the ring, buffering the packets, and outputting the packets on an output link.

Regarding claims 10 and 13, as described above, Upham discloses a control system (290) and Dempsey discloses designating a ring master. In the combination of Kumata in view of Upham and Dempsey provided above the control system of the acting ring master meets the limitation of a master ring controller that permits an add-drop device to act as a master and control overall operation of the ring. This also meets the limitation of controlling the ring from a common expansion port.

Regarding claim 18, see paragraph regarding claim 2 above.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Mazzola (US 5,262,906) Message Routing for SONET Telecommunications
Maintenance Network

5. Any inquiry concerning this communication, or earlier communications from the examiner should be directed to Thomas Volper whose telephone number is 703-305-8405 and fax number is 703-746-9467. The examiner can normally be reached between 8:30am and 6:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu, can be reached at 703-308-6602. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

Application/Control Number: 09/634,706

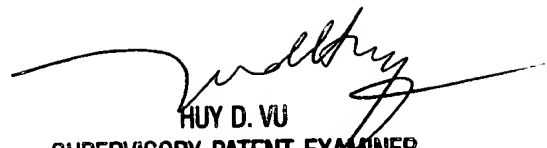
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Thomas E. Volper

TEV

May 16, 2004


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